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## Accommodative and dissuasive factors that affect the intention to transact through the Internet in Greece

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### Abstract

The growth of Internet transactions in Greece in comparison with those in the European Union, are presented low. Therefore, any related research in the field of e-commerce, can be very useful. The purpose of this study is to reveal some of the factors that facilitate or hinder the intention to transact online in Greece. The results of the study showed that the consumer's perceived importance of an online marketplace existence, the Internet usage and the previous experience of making online transactions, increase the intent for online transactions. On the other hand, the consumers' perceived risk decreases the intention to transact online.

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**Keywords:** online transactions; behavioral intention; perceived risk.

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### 1. Introduction

Over the past few decades Internet and World Wide Web development, have given a significant boost to e-commerce. Despite the fact that the most purchases, continue being through traditional channels, e-commerce is the fastest growing type of retailing. According to Eurostat, in 2014, 49% of the Greek population used the Internet every

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day. Nine years earlier, in 2005, the daily usage of the Internet in Greece was up to 11% (Eurostat, 2014). The Laboratory of Electronic Commerce (ELTRUN) Athens University of Economics conducted annual surveys on e-commerce in Greece. The results showed that in 2013, 35% of the Internet users in Greece purchased online a product or a service, at least once. Even though online purchases were increased by 25%, compared to 2012, they still remain at a low level, since in the respective European market, 70% of the Internet users purchase online (Eltrun, 2013).

The main barriers to electronic transactions are considered to be the credit card security, the risk of consumer's personal data disclosure, to third parties, the suspicion on retail Internet businesses, the complex and lengthy procedures for a submission of a new order and the lack of users' familiarity with the online purchasing and the interface of the online store (Yue *et al.*, 2015). According to Rughinis and Rughinis (2014), the main consumers' barriers are related to the security, the confidentiality of transactions and the trust. Harridge-March (2006) stated that consumers perceive more risks when making purchases online, than in transactions made in physical stores. The perceived risk is defined as the uncertainty that consumers face when they cannot predict the consequences of their buying decisions (Schiffman & Kanuk, 2004). In general, perceived risks in the internet come from the novelty and the innovation of the Internet itself (Mansour *et al.*, 2014). In online shopping the risk associated with the distribution channel is greater than the risk associated with the vendor or the product (San Martin & Camarero, 2009). According to Johnson and Walker (2006), the perceived risk in electronic transactions is related to the consumers' personal capacity and confidence in the Internet usage and in the accomplishment of the online transactions. The perceived risk may be lower in cases where the consumer perceives great personal ability and confidence in using technology. Mansour and his colleagues (2014) assert that occasional internet users and users who never made online transactions perceive higher levels of risk in online transactions.

The consumers' loyalty to the organization is recognized as a strategic point for an enterprise (Hsieh & Tsao, 2014; Rafiq *et al.*, 2013). According to Petrick and Sirakaya (2004) the consumer's loyalty constitutes a critical orientation towards the organization. Although, there is a lot of disagreement regarding the significance of the loyalty, most of the studies focus on the volitional of nature, in the behavioral intention (Guenzi and Pelloni, 2004). The behavioral intention shows how strong is people's will to carry out a behavior. Ajzen (2002) states that the behavioral intention is one step right before the behavior and is the strongest predictor of the behavior. Subsequent studies also suggest that the behavioral intention is considered as the best predictor of behavior, rather than any other factor (Wang, *et al.*, 2015; Viaggi *et al.*, 2011). As underlined by Ajzen (1991: 181), "...the stronger the intention to perform a particular behavior, the more likely the person is to perform that behavior".

The purpose of the present study is to reveal some of the factors that facilitate or hinder the intention to transact online in Greece.

## 2. Hypotheses Development

Hsieh and Tsao (2014) as well as Erbschloe and Vacca (2001) assert that the consumers' need for protection policies is positively influenced by the perceived risk, related to online trade. Moreover, Sinha and Singh (2014) and Tiangsoongnarn (2007) assert that the online transactions' perceived risk is positively correlated with the consumers' need for security systems. From the above it can be hypothesized that:

*H1. The need for protection policies and the need for security systems are positively related to the perceived risk in online transactions.*

Sinha & Singh (2014), Miyazaki & Fernandez (2001), Zhou *et al.* (2007) and Tiangsoongnarn (2007), assert that the perceived risk from online transactions is negatively affected by the use of the Internet, the importance of the existence of an online marketplace and the experience of Internet usage. From the above it can be hypothesized that:

*H2. The Internet usage, the perceived importance of existence of an online marketplace and the Internet usage experience are negatively related to the perceived risk in online transactions.*

Soopramanien (2011), Brown, Pope and Voges (2003), Tiangsoongnarn (2007), Ramayah, Aafaqi and Jantan (2003), and Oinas (2002) assert that the use of the Internet, the importance of existence of online marketplace and the experience of Internet usage, are positively affected by consumer's behavioral intention. From the above, it can be hypothesized that:

*H3. The Internet usage, the perceived importance of existence of an online marketplace and the Internet usage experience, are positively correlated with the intention to purchase online.*

The research results of Tiangsoongnorn (2007), Brown *et al.* (2003) and Zhou *et al.* (2007), assert that consumer's behavioral intention for Internet transactions is positively influenced by visiting online markets. From the above it can be hypothesized that:

*H4. Visiting online markets is positively associated with the intention to conduct online transactions.*

Consumers are reluctant to shop online because of the lack of guarantee for the protection of their privacy and because of concerns about security (Rafiq *et al.*, 2013). Miyazaki & Fernandez (2000; 2001), Béllanger *et al.* (2002), Chellappa and Sin (2005), Tiangsoongnorn (2007) and Sinha & Singh (2014), assert that the behavioral intention for Internet transactions, is affected by the perceived risk, the need for protection policies and the need for security systems. From the above, it can be hypothesized that:

*H5. The consumer's perceived risk, the need for protection policies and the need for security systems, are negatively related to their intention to conduct online transactions.*

### 3. Research Methodology

#### 3.1. Sample

The sample consisted of 120 Internet users, who lived in Attika. Data was collected with an anonymous questionnaire, in order to ensure the confidentiality of the responses by using convenience sampling technique (Babbie, 2014; Gravetter and Forzano, 2014) combined with snowball sampling technique (Babbie, 2014).

As to gender, 61 of the respondents were males and 59 were females, from which, the 14,2% were High school or less graduates, the 32,5% were college graduates, the 34,2% had an Undergraduate degree and the 19,2% had a Postgraduate degree. The average age of the sample was about 31 years ( $M=31,43$ ,  $SD = 9,35$  years). Regarding the marital status, 55,0% of the respondents were single, 35,8% were married and 9,2% were divorced. The mean economic status of the respondents measured in a scale, one (1) to five (5), in which 1 indicates "Very Bad Economic Status" and 5 "Very Good Economic Status", was slightly over the average ( $M = 3,25$ ,  $SD = 0,81$ ).

#### 3.2. Questionnaire Structure

The questionnaire consisted of 28 questions, divided into seven conceptual sections. The first section consisted of 6 questions regarding the demographic data of the respondents (age, gender, number of children, economic status and education level).

The second section consisted of 3 questions that determined the Internet usage, the online stores visits, and the frequency of transactions with online stores (e.g. How often did you purchase products from online stores in the last year?). The last question measured both the actual behavior of consumers and their experience in online sales.

The third section consisted of 3 questions that determined the consumers' perceived risk in online transactions (e.g. How likely do you consider the risk of being a fraud victim when you are buying something through the Internet?).

The fourth conceptual section consisted of 3 questions, attempted to determine the participants' desire for the existence of online stores. (e.g. How important it is for you to have access in online stores?)

The fifth conceptual section consisted of 3 questions, attempted to determine the respondents' intention to purchase online in the future. (e.g. Do you intend to purchase products or services through Internet in the future?)

The sixth conceptual section consisted of 7 questions, attempted to determine the respondents' desire degree on the existence of procedures that ensure security and privacy in online transactions. (e.g. How important it is for you the existence of a security organization for consumer's privacy?)

The seventh section consisted of 3 questions that determined the degree of respondents' desire for the existence of procedures to prevent fraud in online transactions (e.g. How important it is for you to be informed regarding the security of your personal details in an online transaction?).

The questions of sections 2, 3, 4, 6 and 7 were adopted from a previous study of Tiangsoongnern (2007). As to the questions of the fifth section, regarding the behavioral intention, were adopted from the study of Zeithaml *et al.* (1996). The questions of sectors 3, 4 and 5 were rated on a 5-point scale, in which 1 indicated “Not at all” with the question and 5 “Very much”. The questions in sectors 6 and 7 were rated on a 5-point scale, in which 1 indicated “Not important at all” and 5 “Totally Important”.

### 3.3. Reliability and Validity

In order to test the validity and the reliability of the questionnaire, an Exploratory Factor Analysis, was conducted, between the 19 questions of the last four sections. After excluding 2 of the 19 questions, because of their factor loadings, (less than 0,45), the remaining 17 questions, yield five factors, which are presented in Table 1. In order to test the validity of each factor, a Reliability Analysis, was performed, on each of the emerged factors, by using the “Cronbach’s Alpha” measure.

Table 1. Exploratory factor analysis and reliability analysis.

Factors and variables	Loadings
<b>Factor 1: Behavioral Intention</b> (M = 3,161, SD = ,778, $\alpha$ = 0.927)	
1 How likely is it for you to positively commend online stores to other people?	0,83
2 Would you encourage friends and relatives to do business with the online stores?	0,88
3 How likely is it for you to buy products or services from online stores in the next few years?	0,85
<b>Factor 2: Perceived Risk</b> (M=3,196, S.D.= ,962, $\alpha$ =0,955)	
4 How possible you believe it is for you to become fraud victim when purchasing online	0,82
5 How secure you feel or would have felt when purchasing online	0,86
6 How risky do you think it is purchasing online	0,87
<b>Factor 3: Need for Protection Policies</b> (M=4,510, S.D.= ,435, $\alpha$ =0,815)	
7 How important do you consider the existence of a security organization of consumers’ personal data?	0,75
8 How important do you consider being informed regarding the usage of your personal data?	0,82
9 How important do you consider the existence of an organization for protection against online frauds?	0,75
10 How important do you consider being informed regarding the security of your personal data	0,59
11 How important do you consider the existence of clear information in the guarantee, when the products are delivered?	0,66
<b>Factor 4: Need for Security Systems</b> (M=4,700, S.D.= ,413, $\alpha$ =0,813)	
12 How important it is for you the existence of programs, that will prevent illegal access to financial data	0,76
13 How important it is for you the existence of programs, that will prevent illegal access to the transaction data	0,77
14 How important it is for you the existence of programs, that will prevent illegal access to your personal data	0,82
<b>Factor 5: Importance of an Online Marketplace Existence</b> (M=3,244, S.D.= ,752, $\alpha$ =0,905)	
15 How important do you think it is, nowadays for physical stores to have an online store	0,71
16 How important it is for you to have access in online stores	0,73
17 How important is for you the existence of many online stores	0,70

K.M.O. and Bartlett’s Test yielded:

- ✓ Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0,864
- ✓ Bartlett’s Test of Sphericity  $X^2=1545,417$ , Sig. = 0,00 (< 0,01)

✓ Total Variance Explained = 78, 23% (>50%)

The validity of the structure of the five factors, that emerged by the Exploratory Factor Analysis, is supported by the Kaiser-Meyer-Olkin's Measure of Sampling Adequacy value, which is higher than 0,8, the significance of Bartlett's Test of Sphericity which is less than 0,01, the interpretation of the total variation which is over 0,5 and the variables' loadings which are ranging between 0,59 and 0,88. The factors' reliability is supported by the Cronbach's  $\alpha$  values which are higher than 0,7.

#### 4. Results

##### 4.1. Research Hypothesis 1

The first research hypothesis investigates whether consumers' need for protection policies and for security systems are positively correlated with the perceived risk in online transactions. In order to investigate the first research hypothesis, a Correlation Analysis was conducted. The results are presented in Table 2.

Table 2. Results of the Correlation Analysis among consumers' "Need for Protection Policies", consumers' "Need for Security Systems" and consumers' "Perceived Risk" in online transactions.

		Need for Protection Policies	Need for Security Systems
Perceived Risk	<b>Pearson Correlation</b>	,163	,205*
	<b>Sig. (2-tailed)</b>	,075	,025

The results reveal that the consumers' need for security systems is positively correlated, with the perceived risk in online transactions (Pearson Correlation>0, Sig. (2-tailed)<0,05). On the other hand, the consumers' need for protection policies, was not found to be associated in a statistically significant level with the perceived risk (Sig. (2-tailed)> 0,05). Thus, the first research hypothesis is partially accepted.

##### 4.2. Research Hypothesis 2

The second research hypothesis investigates whether the internet usage, the perceived importance of an online marketplace existence and the experience in using the Internet, are negatively related to the perceived risk in online transactions. In order to investigate the second research hypothesis, a Multiple Regression Analysis was conducted, where the depended variable was the "Perceived Risk" and the independent variables were the "Internet Usage" and the "Importance of an Online Marketplace Existence". The results are presented in Table 3.

Table 3. Results of the Multiple Regression Analysis among variables "Internet Usage", "Importance of an Online Marketplace Existence" and consumers' "Perceived Risk" in online transactions.

Dependent Variable	Independent Variable	R <sup>2</sup>	F	Sig. F	$\beta$	t	Sig. t
Perceived Risk	Internet Usage				-,425	-6,063	,000
	Importance of an online marketplace existence	,589	83,686	,000	-,451	-6,443	,000

The results, show that the internet usage and the importance of an online marketplace existence, are negatively associated, in a statistically significant level, with the perceived risk ( $\beta < 0$ , Sig.  $t < 0,01$ ). After conducting the Multiple Regression Analysis, an Analysis of Variance (ANOVA) was performed, in order to investigate the existence of correlation between the "Online Shopping Experience", which was the independent variable and the "Perceived Risk", which was the dependent variable. The results are presented in Table 4.

Table 4. Results of the Analysis of Variance (ANOVA) among variables “Online Shopping Experience” and “Perceived Risk”.

Dependent Variable	Online Shopping Experience	Mean	Std. Dev.	F	Sig. F
Perceived Risk	Never	4,3333	,67640	31,222	,000
	1-3 times per year	3,3899	,72423		
	4-6 times per year	2,8182	,57790		
	Once per month	2,3030	,82266		
	Once or more times per week	1,2667	,27889		

The Analysis of Variance, shows that there are statistically significant differences between the frequency discriminations of shopping online (Sig.  $F < 0,01$ ). Applying a multiple comparison test (Bonferroni), revealed statistically significant differences between the first two frequency discriminations of the independent variable (Sig.  $< 0,03$ ), on the other hand, there were no statistically significant differences between the third and fourth discrimination (Sig. = 0,310) and fourth and fifth discrimination (Sig. = 0,054).

According to the total outcome of the analysis of this hypothesis, it can be claimed that the higher is the use of the Internet, the higher is the perception of the importance of the presence of an online market, as well as, the more frequent are the purchases through the Internet, the lower is the perceived risk. Therefore, the 2nd research hypothesis is accepted.

#### 4.3. Research Hypothesis 3

The third research hypothesis investigates whether the internet usage, the importance of the presence of an online market and the experience in using the Internet, are positively related to the intention to transact online. In order to investigate the third research hypothesis, a Multiple Regression Analysis was conducted, where the depended variable was the “Behavioral Intention” and the independent variables were the “Internet Usage” and the “Importance of an Online Marketplace Existence”. The results are presented in Table 5.

Table 5. Results of the Multiple Regression Analysis among variables “Internet Usage”, “Importance of an online Marketplace Existence” and consumers’ “Behavioral Intention”.

Dependent Variable	Independent Variable	$R^2$	F	Sig. F	$\beta$	t	Sig. t
Behavioral Intention	Internet Usage				,528	7,448	,000
	Importance of an online marketplace existence	,579	80,307	,000	,334	4,710	,000

The outcome of the analysis, shows that the “Internet Usage” and the “Importance of an Online Marketplace Existence”, are positively associated, in a statistically significant level, with the intention to transact online ( $\beta < 0$ , Sig.  $t < 0,01$ ). After conducting the Multiple Regression Analysis, an Analysis of Variance (ANOVA) was performed, in order to investigate the existence of correlation between the “Online Shopping Experience”, which was the independent variable and the “Behavioral Intention”, which was the dependent variable. The results are presented in Table 6.

Table 6. Results of the Analysis of Variance (ANOVA) among variables “Online Shopping Experience” and “Behavioral Intention”.

Dependent Variable	Online Shopping Experience	Mean	Std. Dev.	F	Sig. F
Behavioral Intention	Never	2,2778	,59683	34,865	,000

1-3 times per year	2,9308	,49076
4-6 times per year	3,4949	,56594
Once per month	4,0909	,53936
Once or more times per week	4,5333	,44721

The Analysis of Variance, reveals that there are statistically significant differences between the frequency discriminations of shopping online (Sig. F <0,01). The application of a multiple comparison test (Bonferroni test) showed statistically significant differences between all the frequency discriminations of the independent variable (Sig. <0,03), except the fourth and the fifth discriminations (Sig.=1).

According to the total outcome of the analysis of this hypothesis, it can be claimed that the higher is the Internet usage, the higher is the perception of the importance of the presence of an online market, and the more frequent are the purchases through the Internet, the lower is the intention for the performance of transactions through the Internet in the future. Therefore, the 3rd research hypothesis is accepted.

#### 4.4. Research Hypothesis 4

The fourth research hypothesis investigates whether visiting online shops, is positively related to the intention to transact online. In order to investigate the fourth research hypothesis, an Independent Samples T-Test was conducted, where the depended variable was the “Behavioral Intention” and the independent variables was the “Online Shops Visiting”. The results are presented in Table 7.

Table 7. Results of the Independent Samples T-Test, among variables “Behavioral Intention” and “Online Shops Visiting”.

Dependent Variable	Online Shops Visiting	Mean	Std. Dev.	F	Sig. F	t	Sig. (2-tailed)
Behavioral Intention	Yes	3,226	,752	1,272	,262	4,668	,001
	No	2,250	,556				

The results, show that visiting online shops, positively affects, in statistical significant level, the behavioral intention (Sig. (2-tailed)<0,01). More specific, people who have already visited online stores, have a higher intention to transact online, than those who have not. Therefore, the fourth research hypothesis is accepted.

#### 4.5. Research Hypothesis 5

The fifth research hypothesis investigates whether the user’s perceived risk, the user’s need for protection policies and the user’s need for security systems, negatively affect the intention to transact through internet. In order to investigate the fifth research hypothesis, a Multiple Regression Analysis was conducted, where the depended variable was the “Behavioral Intention” and the independent variables were the “Perceived Risk”, the “Need for Protection Policies”, and the “Need for Security Systems”. The results are presented in Table 8.

Table 8. Results of the Multiple Regression Analysis among variables “Perceived Risk”, “Need for Protection Policies”, “Need for Security Systems” and “Behavioral Intention”.

Dependent Variable	Independent Variable	R <sup>2</sup>	F	Sig. F	$\beta$	t	Sig. t
Behavioral Intention	Perceived Risk	,460	32,90	,000	-,690	-9,880	,000
	Need for Protection Policies				,124	1,406	,162
	Need for Security Systems				,038	,426	,671



## 5. Conclusions - Discussion

The aim of the present study was to reveal some of the factors that facilitate and hinder the desire to transact online, in Greece. The intention to transact via the Internet was identified as slightly above the average, however, almost on the same level was recorded the perceived risk of online transactions. Both the need for protection policies and the need for security systems, which reduce consumers' insecurity on purchasing products or services online, were identified in a very high level. The online transactions' perceived risk is positively related to the need for security systems. Finally, the existence of an online marketplace, which importance recorded below the average, didn't play an important role to consumers' intention to transact online.

The results also, reveal that the perceived risk on internet transactions is positively associated with the need for security, which is in line with the results of Palmer *et al.* (2000), Tiangsoongnern (2007) and Sinha & Singh (2014). On the other hand, these results are opposing those of Miyazaki & Fernandez, (2000, 2001), and Erbschloe & Vacca, (2001), who stated that the consumers' perceived risk is not related to their need for protection policies. That finding probably indicates the Greek consumer's lack of trust towards on-line businesses and their formalities in protection policies. Apparently, the existence of security systems inspires greater confidence among potential or actual online consumers than the formalities of the protection policies do.

The importance of the presence of an online marketplace and the Internet usage, were found to reduce the perceived risk in online transactions, which is in line with what Miyazaki & Fernandez (2001), Soopramanien (2011) and Tiangsoongnern (2007) stated. Regarding the internet usage, it was determined that the more it is used, the lower the perceived risk in online transactions is.

Almost similar results were obtained regarding the effect of the perceived importance of an online marketplace existence and the Internet usage, on the intention to transact online in the future. These results are in line with those of Tiangsoongnern (2007) and Brown *et al.* (2003). Both the perceived importance of an online marketplace existence and the internet usage positively affect consumers' intention to transact online. The longer the internet usage is, the greater the intention to transact online is. Individuals, who have not visit online marketplaces at all, seem to have less intention to transact online, than those who do. This finding seems logical, since people, who do not visit online marketplaces, cannot perceive the potential benefit from purchasing from online stores, nor be exposed to the efforts to be attracted by these stores.

The perceived risk in online transactions negatively affects consumers' intention to transact online. The higher the perceived risk is, the lower the intention to transact online. This finding is in line with several previous researches (Miyazaki & Fernández, 2000, 2001; Bellanger *et al.*, 2002; Chellappa & Sin, 2005; Soopramanien, 2011; Sinha & Singh, 2014; Hsieh & Tsao, 2014). Therefore, it seems that the Greek consumers' perceived risk in online transactions is an extremely strong barrier, which prevents them to proceed with an online transaction. Both the need for protection policies and the need for security systems were not found to affect directly and decisively consumers' intention to transact online, despite the opposite view of Miyazaki and Fernández (2000, 2001), Bellanger *et al.* (2002) and Chellappa and Sin (2005). However, the need for security systems indirectly affects the behavioral intention, and it is positively related to the perceived risk, which is negatively related to the behavioral intent.

In conclusion, although Greek consumers are still not quite familiar with the idea of buying through Internet, the figures of Greek web buyers are increasing more and more ( Eurostat, 2014; ELTRUN, 2013 ). The increase of the Internet usage, entails the reduction of the perceived risk in Internet transactions, while it maximizes consumers' intention to transact online. However, the Greek consumers' perceived risk stands as a critical barrier, which lurks when they carry out transactions through the Internet. Nevertheless, the more online transactions the consumers do, the more limited the perceived risk appears to be, while the intention to transact online increases. Online shops can reduce the consumers' perceived risk and increase their intention to transact online by using credible security systems. The same result could occur by adducing the potential benefits that consumers may have, when shopping online. This action would increase consumer's consciousness regarding the importance of online businesses; furthermore it would reduce the perceived risk and grow the consumption behavioral intention.

This study is subject to certain limitations, the most important of which is the small sample. The outcomes of this study may not have represented all internet users in Greece. Moreover, this study used only four factors that affect the intention to transact through the Internet in Greece. Further research should consider enablers and deterrents that affect



the intention to transact online using a larger sample of Greek population and to investigate if other factors should be included.

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